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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SCOTT A. MOSKOWITZ and MARC COOPERMAN

Appeal 2007-2273
Application 08/999,766[1]
Technology Center 2100

Decided: January 8, 2008

Before LANCE LEONARD BARRY, HOWARD B. BLANKENSHIP, and JAY P. LUCAS, *Administrative Patent Judges*.

LUCAS, *Administrative Patent Judge*.

DECISION ON APPEAL

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[1] Application filed July 23, 1997. Appellants claim the benefit of parent applications 08/489,172 filed 6/7/1995 and 08/775,216 filed 12/31/1996, both patented. The real party in interest is Wistaria Trading, Inc.

STATEMENT OF CASE

Appellants appeal from a final rejection of claims 25 to 63 under authority of 35 U.S.C. § 134. The Board of Patent Appeals and Interferences (BPAI) has jurisdiction under 35 U.S.C. § 6(b). An Oral Hearing was held on December 19, 2007 before the Administrative Patent Judges of record.

Appellants' invention relates to a method to code and decode a message (independent information) into musical or visual or other multimedia content so the message (e.g. a digital watermark or copyright notice) is hidden in the content. This "hiding in plain view" is often called steganography. Appellants' invention relates to steganographically hiding a message using a "stega-cipher," which was defined by the Appellants as:

> The-invention draws on techniques from two fields, cryptography, the art of scrambling messages so that only the intended recipient may read them, and steganography, a term applied to various techniques for obscuring messages so that only the intended parties to a message even know that a message has been sent, thus it is termed herein as a stega-cipher. The stega-cipher is so named because it uses the steganographic technique of hiding a message in multimedia content, in combination with multiple keys, a concept originating in cryptography. However, instead of using the keys to encrypt the content, the stega-cipher uses these keys to locate the hidden message within the content. The message itself is encrypted which serves to further protect the message, verify the validity of the message, and redistribute the information in a random manner so that anyone attempting to locate the message without the keys cannot rely on pre-supposed knowledge of the message contents as a help in locating it.

(Spec. 7:13-25).

Claim 25 and Claim 29 are exemplary:

25. A method for steganographically protecting a digital signal comprising the steps of:

a) providing a carrier signal

b) using a stega-cipher to steganographically encode independent information including a digital watermark into the carrier signal.

29. A method for steganographically protecting a digital signal comprising:

a) providing a carrier signal that has been encoded with independent information; and

b) using a stega-cipher to steganographically decode independent information including a digital watermark from the carrier signal.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Morris	US 5,530,751	Jun. 25, 1996
Barton	US 5,912,972	Jun. 15, 1999
Powell ('377)	US 5,930,377	Jul. 27, 1999
Powell ('317)	EP 0,581,317 A2	Feb. 2, 1994

Schneier, B., *Applied Cryptography* 67-68, 224-26 (1st ed., 1994)

Bender et al. (Bender), "Techniques for data hiding," 2420 *Proc. SPIE: Storage and Retrieval for Image and Video Databases III 164-73 (March 1995)*

Cox, I.J. et al., "Secure Spread Spectrum Watermarkings for Multimedia, *NEC Research Institute, Technical Report 95-10,* pp. 1-33

Rejections:

R1: Claims 25-63 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

R2: Claims 25, 27-29, 31-33, 35, 62, and 63 are rejected under 35 U.S.C. § 102(a) as being anticipated by Bender et al. ("Techniques for data hiding")

R3: Claims 25-33, 35-39, 62, and 63 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Powell et al. (EPO 0 581 317 A2, in the Response to Arguments section, this reference is referred to as EP-Powell).

R4: Claims 34, 40-43, and 46-48 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Powell et al. in view of Schneier.

R5: Claims 44, 45, and 49 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Powell et al. and Schneier in view of Cox et al. ("Secure Spread Spectrum Watermarking for Multimedia").

R6: Claims 50-51 and 58-61 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Powell et al. and Schneier as applied to claims 41, 48, and 29 above, and further in view of Barton.

R7: Claims 52-54 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Powell et al. in view of Barton.

R8: Claims 55-57 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Powell et al. and Barton as applied to claim 54 above.

R9: Claims 26, 30, and 52-54 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bender et al. in view of Barton.

R10: Claim 34 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Bender et al.

R11: Claim 36 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Bender et al. in view of Morris.

R12: Claim 37 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Bender et al. in view of Powell et al. (5930377).

R13: Claims 38 and 39 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bender et al. in view of Braudaway et al.

R14: Claims 40-43 and 46-48 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bender et al. in view of Schneier.

R15. Claims 44, 45, and 49 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bender et al. and Schneier in view of Cox et al. ("Secure Spread Spectrum Watermarking for Multimedia").

R16: Claims 50-51 and 58-61 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bender et al. and Schneier as applied to claims 41, 48, and 29 above, and further in view of Barton.

R17: Claims 55-57 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bender et al. and Barton as applied to claim 54 above.

Appellants contend that the claimed subject matter is not anticipated by Bender or EP- Powell, or rendered obvious by the cited combinations of references, for reasons to be discussed more fully below. The Examiner contends that each of the groups of claims is properly rejected.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the Briefs and the Answer for their respective details. Only those arguments actually made by Appellants have been considered in this decision. Arguments which Appellants could have made but chose not to make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2004).[2]

We affirm-in-part the rejections.

ISSUE

The issue is whether Appellants have shown that the Examiner erred in rejecting the claims under 35 U.S.C. § 112 ¶ 1, § 102(a) and (b) and § 103(a). The issue turns on manifold contentions of the Appellants and Examiner, which will be explored below.

FINDINGS OF FACT

The record supports the following findings of fact (FF) by a preponderance of the evidence.

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[2] Appellants have not presented any substantive arguments directed separately to the patentability of the dependent claims or related claims in each group, except as will be noted in this opinion. In the absence of a separate argument with respect to those claims, they stand or fall with the representative independent claim. *See In re Young,* 927 F.2d 588, 590 (Fed. Cir. 1991).

1. Appellants have invented a method for hiding a digital watermark, copyright notice or other information into a multimedia carrier signal using a technique they call a stega-cipher. (Specification, page 7, bottom). The term stega-cipher is not found in dictionaries, but is used by the Appellants in this and other patent literature to refer to a stenographic technique that has certain specific characteristics itemized in the specification. (*Id.*).

2. [Due to the large number of rejections and references, Findings of Fact specific to individual rejections have been placed in the Analysis section below of the respective rejections.]

PRINCIPLES OF LAW

Appellants have the burden on appeal to the Board to demonstrate error in the Examiner's position. See *In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of prima facie obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

"In reviewing the [E]xaminer's decision on appeal, the Board must necessarily weigh all of the evidence and argument." *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

"To reject claims in an application under section 103, an examiner must show an unrebutted *prima facie* case of obviousness. … On appeal to

the Board, an applicant can overcome a rejection by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness." [citations removed] *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)

Both anticipation under 35 U.S.C. § 102 and obviousness under § 103 are two-step inquiries, in which the first step is a proper construction of the claims and the second step requires a comparison of the properly construed claim to the prior art. *Medichem S.A. v. Rolabo S.L.*, 353 F.3d 928, 933 (Fed. Cir. 2003).

Under the written description requirement of 35 U.S.C. § 112, the disclosure of the application relied upon must reasonably convey to the artisan that, as of the filing date of the application, the inventor had possession of the later claimed subject matter. *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563 (Fed. Cir. 1991). "One shows that one is 'in possession' of *the invention* by describing *the invention,* with all its claimed limitations, not that which makes it obvious." *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997) .

Although "the meaning of terms, phrases, or diagrams in a disclosure is to be explained or interpreted from the vantage point of one skilled in the art, all the limitations must appear in the specification." *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997). The specification need not describe the claimed subject matter in exactly the same terms as used in the claims, but it must contain an equivalent description of the claimed subject matter. *Id.*

It is axiomatic that anticipation of a claim under § 102 can be found only if the prior art reference discloses every element of the claim. *See In re King*, 801 F.2d 1324, 1326 (Fed. Cir. 1986) and *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co*., 730 F.2d 1452, 1458 (Fed. Cir. 1984).

Our reviewing court states in *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989) that "claims must be interpreted as broadly as their terms reasonably allow." Our reviewing court further states that "the words of a claim 'are generally given their ordinary and customary meaning.'" *Phillips v. AWH Corp*., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal citations omitted). The "ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1313.

ANALYSIS

From our review of the administrative record, we find that the Examiner has presented a prima facie case for the rejections of Appellants' claims under 35 U.S.C. §§ 112 (¶1), 102, and 103. The prima facie cases are presented on pages 6 to 21 of the Examiner's Answer.

In opposition, Appellants present two main lines of argument. The first argument addresses the issue of sufficient written description under 35 U.S.C. § 112, ¶ 1, and the second line argues the individual references applied under 35 U.S.C. § 102 and § 103.

Rejection under 35 U.S.C. § 112, paragraph 1

The Examiner has rejected claims 25 to 63 under 35 U.S.C. § 112, ¶ 1, "as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention." (Answer, page 7, bottom).

In paragraphs 1 to 8 of the Examiner's Answer, the Examiner relates a series of communications held between himself and the Appellants. The import of the discussion is that the term "stega-cipher," as used in independent claims 25 and 29 and therefore all of the claims, was said by the Appellants to include the concept that the key, the primary mask that specifies where the message information is to be placed in the carrier signal, is generated based on that message information. The Examiner contends that since the cited concept is not clearly stated in the specification as filed, he has rejected all of the claims under 35 U.S.C. § 112, ¶ 1. Appellants argue that the term "stega-cipher" is clearly defined in the specification as filed, and thus the rejection is not warranted.

We agree with the Appellants at least on the issue to be resolved. (Brief, page 4, bottom). The long and detailed arguments of the parties may have centered on some statements in later-filed papers and interviews, but we see the statutory issue as strictly whether there is support in the specification as filed for the claimed stega-cipher subject matter. In accordance with the teachings of *Phillips v. AWH Corp* (cited above), after

considering the common meanings of the terms of the claims, we look to the Specification to find any special meanings of the claims' limitations. We find that the term "stega-cipher" is defined in the Specification, page 7, and that definition is sufficient to support its use in the claims of this application[3]. Resolution of the Appellants' and Examiner's arguments concerning the key is not necessary to satisfy the legal requirement of the written description clause of 35 U.S.C. § 112, ¶ 1.

Armed with the Specification's definition, we consider the standard of written description presented in *Vas-Cath Inc. v. Mahurkar* (discussed above). We find the limitations of the claims are supported by the definitions, recitations and examples in the Specification as filed. Examiner has not cited a specific claim that is not supported by them, and the question of the key is not instrumental. We find a sufficient definition of the claimed subject matter in the Specification as filed, and thus find that the Examiner has erred in imposing this rejection.

Thus after reviewing the Specification, and the claimed subject matter, we find the Examiner erred in rejecting (R1) claims 25 to 63 under 35 U.S.C. 112, ¶ 1.

Rejections under 35 U.S.C. § 102 (a) and (b)

[3] It is noted that a different definition was supplied later in the prosecution in an Interview Summary, but this panel holds that a definition presented in the original specification is the proper authority to support the claims. (Brief, page 7, footnote 1.)

Claims 25, 27 to 29, 31 to 33, 35, 62, and 63 have been rejected (R2) under 35 U.S.C. § 102 (a) over Bender. Under this statutory basis for rejection, the reference must anticipate every limitation of the claims. (*See In re King* cited above.) The first step of our analysis is to determine the true scope of the claim. (*Medichem S.A. v. Rolabo S.L.*, cited above).

Claim 25, the representative claim, is deceptively simple. It claims first "providing a carrier signal," which is simply the music or picture into which the message will be inserted. Then it claims "using a stega-cipher to steganographically encode independent information including a watermark into the carrier signal." These two steps are the limitations of this claim, and leave an obvious question in the mind of the reader, as the meaning of the second step is almost entirely dependent on the meaning of one term.

What is a stega-cipher? To understand the scope of the claim we must understand that term, which is not in our standard dictionaries, and from a search in Google.com, appears to be a term largely derived from the inventors in various patents and articles. Thus, in accordance with the *Phillips v. AWH Corp* guidance, and consistent with the previous 35 U.S.C. § 112 ¶ 1 analysis, we look to the Appellants' definition at the bottom of page 7 of the Specification.

> The stega-cipher is so named because it (1) uses the steganographic technique of hiding a message in multimedia content, (2) in combination with multiple keys, a concept originating in cryptography. However, instead of using the keys to encrypt the content, the (3) stega-cipher uses these keys to locate the hidden message within the content. The (4) message itself is encrypted which serves to further protect the message, verify the validity of the

> message, and redistribute the information in a random manner so that anyone attempting to locate the message without the keys cannot rely on pre-supposed knowledge of the message contents as help in locating it.

(Specification, page 7, bottom) [parenthetic numbers added]

The definition yields four characteristics that are necessary for being a stega-cipher: (1) the use of a steganographic technique of hiding a message in content; (2) multiple keys for decoding the message from the content; (3) the keys are used to locate the hidden message, not encrypt the content; and (4) the message itself is encrypted. We will consider these characteristics as definitive of being a stega-cipher, and include them with the other limitations of the appealed claims. Note that we are striking a balance in this analysis between the proper "reading of terms in view of the specification" and the impermissible "reading limitations of the specification into the claims." We will not be reading the entire Specification into the term "stega-cipher," and we may find that the cited references achieve the definition, but in a different way than that disclosed in the Specification.

Considering now the rejection over the Bender reference. Bender teaches steganographically embedding data into images or audio signals. (Bender, abstract). The embedded data is independent of the content of the carrier signal. (*Id,* ¶ 2.1.1 first paragraph). The embedded data may be a watermark. (*Id.,* page 165, top).

With respect to employing a stega-cipher, Bender uses steganographic techniques to hide the message in the content, satisfying requirement (1) (*Id.*). Concerning multiple keys, (2) Bender uses a known seed value to

generate a sequence of points in the picture, which points contain the message by slightly adjusting the picture. He uses "patches of several points," dependent on the key(s), which keys (3) are used to locate the hidden message, not encrypt the data. (*Id.*, page 167, top two paragraphs). Bender also teaches, in describing his prior work, that the (4) embedded data may be encrypted. (*Id,* ¶ 1.2, middle of the paragraph). Though we have analyzed Bender with respect to hiding the independent data in images, Bender also teaches hiding the data in audio using similar techniques. (*Id.*, § 3).

The Examiner has presented the prima facie case over Bender, using some of the analysis points mentioned above, plus some other referenced sections of Bender especially in the audio section. (Answer, pages 8 and 9). Appellants have presented a number of arguments to this analysis. Appellants contend that the "key" in Bender is not a key as claimed, but that Bender's key is a "pseudo-random sequence modulated at a known rate." Though we find that in Bender the term "key" is used slightly differently than in the Specification, the key of Bender is used to generate the random spots or frequencies in which the independent information is hidden. Those actual spots or frequencies are the "keys" according to the definition of stega-cipher that we have accepted above. However, the issue is whether Bender teaches having locations in the spatial or frequency domains in which the information is hidden, which we find in fact to be the case.

We thus do not find error in the rejection (R2) under 35 U.S.C. § 102(a) over Bender.

The Examiner has also rejected (R3) claims 25 to 33, 35 to 39, 62, and 63 under 35 U.S.C. § 102(b) for being anticipated by "EP Powell". EP Powell teaches embedding signatures within a document so subsequent copies can be identified as coming from the original. Though he recognizes digital signatures, he does "teach away" from their use in his system because they become modified to uselessness on resizing, rotating, cropping, or modifying the underlying image. (EP Powell, page 2, line 20). However, he teaches a method and system for embedding image signatures within visual images, applicable to digital representations as well as print or film. (*Id.*, page 2, line 28). A plurality of signature points is picked, and the signature is redundantly embedded in the image. (*Id.*, page 2, line 40). The signature points are chosen at the extremas, the local extremes of luminance or color, in the picture. (*Id.*, page 3, line 54). The data is marked by varying its pixel values by a small amount, 2% to 10%. (*Id.*, page 4, line 45). To discover the points for checking for authenticity, one uses the original image to find the altered signature points. (*Id.*, page 5, line 50). An alternative is disclosed where the X-Y coordinates of each signature point are stored in a database, associate with the bit values of the signatures.

The Examiner presents the prima facie case in the Answer, pages 10 to 13. Appellants raise a number of objections to this analysis. (Brief, page 17, bottom). More particularly, Appellants propose that EP Powell does not utilize keys to locate the embedded data, as witnessed by his using the original image to locate the embedded information. The database with the coordinates of the signature points is closer to the keys of a stega-cipher,

but not anticipatory of them. We might add that Powell does not teach the digital watermark, or the encryption of the message, which are both claimed limitations.

We thus find the Examiner erred in making a rejection (R3) of claims 25 to 33, 35 to 39, 62, and 63 under 35 U.S.C. § 102(b) over EP Powell.

Rejections under 35 U.S.C. § 103 (a)

The Examiner has rejected (R4) claims 34, 40 to 43, and 46 to 48 under 35 U.S.C. § 103(a) for being obvious over Powell (note-U.S. Powell) in view of Schneier, for reasons cited in the Answer, pages 13 to 14. Schneier is a part of a reference book on the DES Data Encryption Standards. The Examiner asserts that in view of the DES, it would have been obvious to encrypt the signature in Powell, and modify derivative encoded signals as claimed in the recited claims.

Appellants argue both the motivation to combine these references (Brief, page 21) and that the combination does not disclose the claimed invention. We need not decide on the motivation to combine these references, as we find that the combination does not supply sufficient teachings to render the claims obvious there over. Appellants contend that the person of ordinary skill in the art would apply the teaching of Schneier to encrypt the whole message, an argument that is not without merit. More importantly, the elements of the Appellants' stega-cipher recounted above as missing from EP Powell are not cured by this combination of U.S. Powell

and the DES reference book. Claim 34 contains details of the relative differences of the derivative encoded signals from the original carrier signal. Claim 40 claims random start-of-message delimiters and message bit streams encoded with certain values. We do not find that the Examiner has established these limitations to be obvious over the cited art.

We find the Examiner erred in maintaining this rejection (R4).

Claims 44, 45, and 49 have been rejected under 35 U.S.C. 103(a) over Powell and Schneier in view of Cox (R5) and the same claims over Bender and Schneier in view of Cox (R15). The Examiner proposes the teachings of Cox concerning adding the watermark to the frequency domain of the carrier signal, after a transform, would render obvious claims 44, 45, and 49 in view of the other teachings. These claims, which add the limitation of frequency domain transformation, are all dependent on claim 40, then claim 41. A review of the cited references do not reveal a teaching of the pseudo-random start of message delimiters, that mark the positions of the independent information embedded in the carrier signal. In Bender it is assumed that the start/stop points are known (page 172, top), and they are not mentioned in Powell.

We thus find the Examiner erred in rejecting these claims (R5) and R(15).

The Examiner rejected (R6) claims 50, 51, and 58 to 61 under 35 U.S.C. §103(a) for being obvious over Powell and Schneier in view of Barton. With deference to the difference in the digital signatures in Barton and Powell, pointed out by Appellants (Brief, page 27 middle), we also find

a lacking in the primary reference Powell, as described above, with regard to keys. We thus find that Examiner erred in rejecting these claims. (R6).

The Examiner rejected (R7) (R8) claims 52 to 54 and 55 to 57 under 35 U.S.C. §103(a) for being obvious over Powell in view of Barton. In view of the Appellants' arguments (Brief, page 26), and with regard to our comments above on the use of Powell's teachings with regard to the claimed subject matter, we find that the Examiner erred in maintaining these rejections. (R7) (R8).

The Examiner rejected (R9) claims 26, 30, and 52 to 54 over Bender in view of Barton. With regard to claims 26 and 30, we agree with the analysis of the Examiner (Answer, page 16, bottom). The independent data can be a digital stream as taught by Barton. Concerning claims 52 to 54, we likewise concur with the analysis of the Examiner, in view of Barton's teaching, of serializing the information to be embedded in the carrier signal of Bender.

We do not find Examiner erred in maintaining this rejection. (R9).

The Examiner rejected claim 34 (R10) under 35 U.S.C. § 103(a) for being obvious over Bender alone. We do not find in Bender's single sentence suggesting encrypting the independent data sufficient detail for rendering obvious the processing of first and second derivative encoded signals. We find the Examiner erred in maintaining this rejection (R10).

The Examiner rejected (R11) claim 36 under 35 U.S.C. §103(a) for being obvious over Bender in view of Morris. The Examiner contends that Morris teaches changing a single pixel in a digitized image, or a single bit in

a single sample. In Morris, column 3, lines 32 and 51, we see such a teaching, in the context of a patent addressing inserting an identification code in music or art to identify copies. We do not find error in this rejection. (R11).

The Examiner rejected (R12) claim 37 under 35 U.S.C. §103(a) for being obvious over Bender in view of Powell. Appellants do not argue this rejection, and we do not find error in this rejection. (R12).

The Examiner rejected (R13) claims 38 and 39 under 35 U.S.C. §103(a) for being obvious over Bender in view of Braudaway. Appellants do not argue this rejection, and we do not find error in it. (R13).

Claims, 40 to 43 and 46 to 48 are rejected (R14) over Bender in view of Schneier. Claim 40 includes the limitation of a mask, and random or pseudo-random start of message delimiters. The Examiner asserts that DES uses starting vectors and end of message padding, but this is not supported in the provided documentation, Schneier. Although we can appreciate encrypting the independent data of Bender using DES, the details as specified in these claims are not supported in the references.

We find the Examiner erred in rejecting (R14) these claims over the cited art.

(R15 was discussed with R5 above.)

Claims 50 and 51 and 58 to 61 were rejected (R16) under 35 U.S.C. §103(a) for being obvious over Bender in view of Schneier and Barton. The Examiner contends that it would have been obvious to combine the digital signature taught by Barton with the general teaching of the stega-cipher

taught by Bender, further modified to include an encryption of the independent information taught by Schneier. With respect to claim 58, we agree. However, we do not find that the independent teachings assembled for this rejection are either sufficiently complete (e.g. message delimiters, hash values, or digital signature based on the start of message delimiter) or complementary to suggest to an ordinary practitioner in this art all of the claimed limitations of claims. We find the Examiner erred in rejecting (R16) the claims 50, 51, and 59 to 61 and did not err in applying this rejection to claim 58, which only indicates that the encrypted digital watermark would have a hash value, which is common.

Claims 55 to 57 are rejected (R17) under 35 U.S.C. §103(a) for being obvious over Bender and Barton. Barton teaches (Col 6, line 25+) calculating the size of the independent information that may be hidden as a digital watermark in a carrier signal. It mentions that the authentication information is encrypted. Bender, as mentioned above, teaches that point, albeit more generally. We do not find that the Examiner erred in rejecting (R17) these claims 55 to 57.

CONCLUSIONS OF LAW

Based on the findings of facts and analysis above, we conclude the following:

R1: The Examiner erred in rejecting claims 25 to 63 under 35 U.S.C. 112, ¶ 1.

R2: We do not find error in the rejection (R2) of claims 25, 27 to 29, 31 to 33, 35, 62, and 63 under 35 U.S.C. § 102(a) over Bender.

R3: We find the Examiner erred in making a rejection (R3) of claims 25 to 33, 35 to 39, 62, and 63 under 35 U.S.C. § 102(b) over EP Powell.

R4: The Examiner erred in rejecting (R4) claims 34, 40 to 43, and 46 to 48 under 35 U.S.C. 103(a) for being obvious over Powell (note-U.S. Powell) in view of Schneier.

R5, R15: We find the Examiner erred in rejecting these claims (R5), R(15) 44, 45, and 49 under 35 U.S.C. 103(a) over Powell and Schneier in view of Cox (R5) and the same claims over Bender and Schneier in view of Cox (R15).

R6: The Examiner erred in rejecting (R6) claims 50, 51, 58 to 61 under 35 U.S.C. §103(a) for being obvious over Powell and Schneier in view of Barton.

R7, R8: The Examiner erred in rejecting (R7) (R8) claims 52 to 54 and 55 to 57 under 35 U.S.C. §103(a) for being obvious over Powell in view of Barton.

R9: The Examiner did not err in rejecting (R9) claims 26, 30, and 52 to 54 over Bender in view of Barton.

R10: The Examiner erred in rejecting claim 34 (R10) under 35 U.S.C. §103(a) for being obvious over Bender alone.

R11: The Examiner did not err in rejecting (R11) claim 36 under 35 U.S.C. §103(a) for being obvious over Bender in view of Morris.

R12: The Examiner did not err in rejecting (R12) claim 37 under 35 U.S.C. §103(a) for being obvious over Bender in view of Powell.

R13: The Examiner did not err in rejecting (R13) claims 38 and 39 under 35 U.S.C. §103(a) for being obvious over Bender in view of Braudaway.

R14: The Examiner erred in rejecting (R14) claims, 40 to 43 and 46 to 48, over Bender in view of Schneier.

R15: This was discussed above with R5.

R16: The Examiner did not err in rejecting claim 58, but did err in rejecting (R16) claims 50 and 51 and 59 to 61 under 35 U.S.C. §103(a) for being obvious over Bender in view of Schneier and Barton.

R17: The Examiner did not err in rejecting claims 55 to 57 (R17) under 35 U.S.C. §103(a) for being obvious over Bender and Barton.

DECISION

In applying the above determinations of error and non-error to the claims, and considering the claim dependencies, we hold the Examiner's rejections of claims 32, 34, and 40 to 51 to be reversed. The rejections of claims 25 to 31, 33, 35 to 39, and 52 to 63 are affirmed.

AFFIRMED-IN-PART

clj

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